

Authorization for Incidental Take and Implementing Agreement

Pursuant to the Illinois Endangered Species Protection Act (520 ILCS 10/5.5) the City of Sterling, Illinois' (wastewater treatment plant outfall and multiport diffuser project) authorization for the incidental take of the State threatened black sandshell mussel (*Ligumia recta*) and the spike mussel (*Elliptio dilatata*) impacting the Rock River in Whiteside County, Illinois (as described/shown in the conservation plan received by the Department on October 24, 2003) is hereby granted, subject to the terms and conditions described in the attached Authorization and Implementing Agreement. The Illinois Department of Natural Resources has determined that this authorized take is incidental to the construction of a new wastewater outfall and multiport diffuser impacting the Rock River in Whiteside County, Illinois.

Procedural History

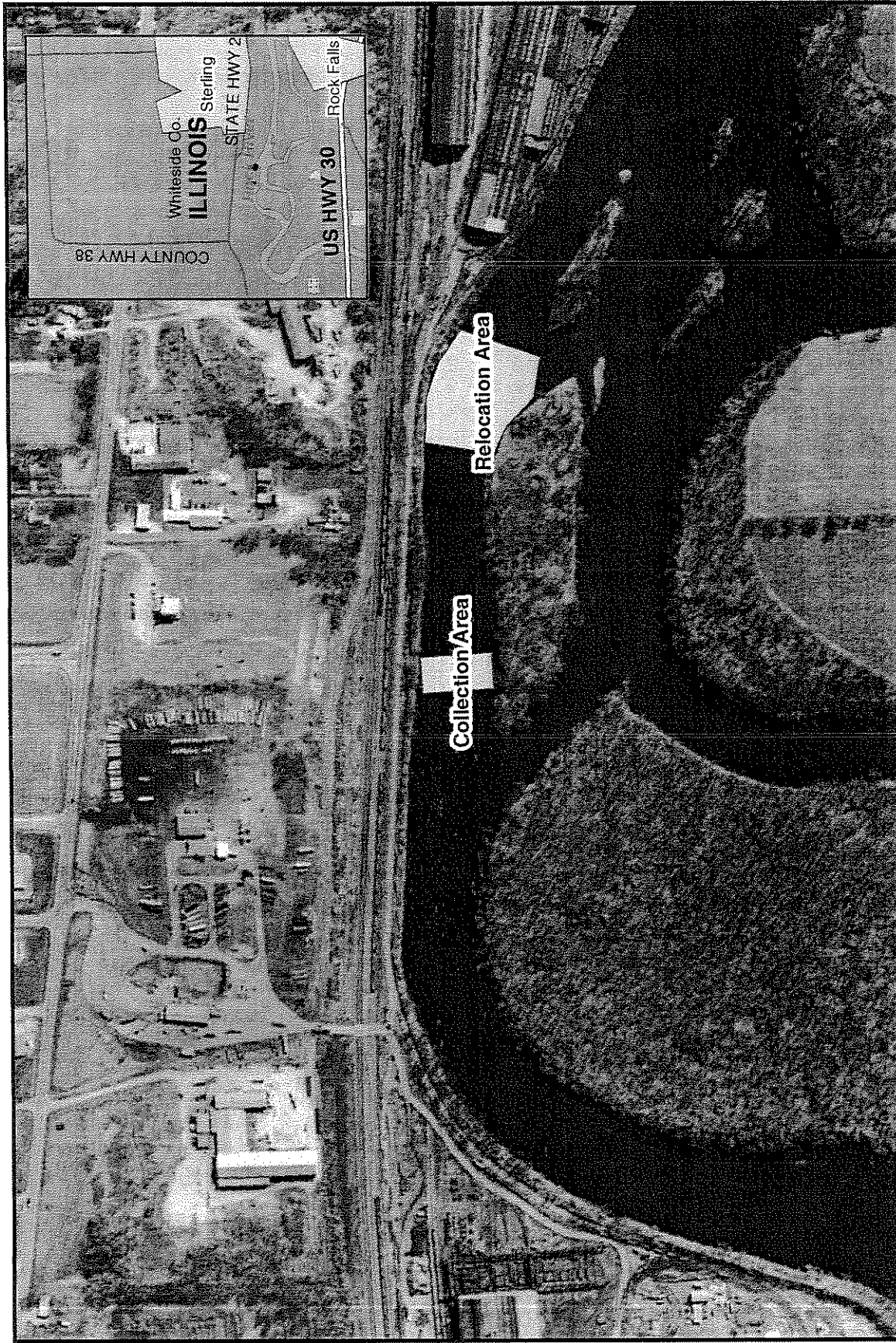
Willett, Hofmann & Associates, Inc. (WHA), acting as environmental consultant for the City of Sterling, Illinois prepared a conservation plan as described by the Illinois Endangered Species Protection Act (520 ILCS 10/5.5). That plan and WHA's request for authorization for incidental take of black sandshell and spike mussels were received by the Illinois Department of Natural Resources (Department) on July 1, 2003. Public notice of WHA's request for authorization of incidental take of black sandshell and spike mussels was published in the Edwardsville Intelligencer (Official State newspaper) and the Daily Gazette (Whiteside County) on February 27, 2004, as well as on March 5, and March 13, 2004. Public comments on WHA's conservation plan were accepted by the Department until April 13, 2004. No comments were received by the public during the period of February 27 through April 13, 2004.

Compliance with the Endangered Species Protection Act

The Illinois Endangered Species Protection Act includes six criteria which must be met for the authorization of incidental take of an endangered or threatened species. These criteria and the Department's determination for each criteria are listed below.

1. The taking will not be the purpose of, but will only be incidental to, the carrying out of an otherwise lawful activity:

The stated and apparent purpose of this proposed action is to construct a new wastewater outfall and multiport diffuser for the City of Sterling, IL. impacting a portion of the Rock River in Whiteside County, Illinois. This portion of the Rock River potentially contains habitat for freshwater mussels, including State listed species. In the course of these construction activities, Huff and Huff, Inc. and Ecological Specialists, Inc. [HHES] (acting as subcontracting environmental consultants) will relocate all observed mussels (listed or non-listed species) disturbed by construction, hence a technical "taking" of these species. Such taking is not the purpose of the activities proposed by WHA/City of Sterling, but is incidental to the carrying out of a lawful activity.



**ECOLOGICAL
SPECIALISTS, INC.**

Figure 1. Collection and relocation area on the Rock River, Whiteside County, Illinois.

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2. The parties to the conservation plan will, to the maximum extent practicable, minimize and mitigate the impact caused by the taking.

The conservation plan prepared by WHA, in conjunction with HHES, and received by the Department on October 24, 2003 stated that freshwater mussel surveys, and subsequent relocations, would be conducted prior to initiation of in-stream construction and most likely during the spring/summer while water temperatures are at or above 50 degrees Fahrenheit. All mussels observed (listed or non-listed species) are to be relocated in order to minimize impacts. Mussel surveys will be conducted using standard survey techniques including searching by feel to methodically cover the area to be disturbed by the project (viewing boxes, wading in shallow water, SCUBA in deeper water-if applicable). All mussels found will be identified to species. Mussels will be relocated into areas of suitable habitat, in the same stream/river, preferably upstream of the construction site. Specifically, the transplant site will be close to the collection area and have similar to better water quality and substrate. HHES are working together on several similar projects and have extensive experience with Midwestern mussels. Huff & Huff/Ecological Specialists, Inc. will provide the Department with a report detailing the results of all mussel surveys and relocation efforts within 45 days of completing all surveys/relocations. In summary, mussel surveys and related relocations will occur only after Department authorization and prior to any construction activities.

3. The parties to the conservation plan will ensure that adequate funding for the conservation plan will be provided:

In an official correspondence to the Department dated January 22, 2004, the City of Sterling, IL., verified that adequate funding exists to support and implement all (mitigation) activities described in the official Conservation Plan. This correspondence (signed by City Manager, Jay Weiland) stated that funding assistance for the wastewater treatment plant outfall and multipoint diffuser project will be provided through the Illinois EPA's water pollution control revolving fund loan program. The City has committed to budget and authorize, during their FY 2005 budget appropriation ordinance, adequate funding to provide for project construction activities and implementation of all mitigation activities required and described in the official conservation plan.

4. Based on the best available scientific data, the Department has determined that the taking will not reduce the likelihood of the survival or recovery of the endangered species or threatened species in the wild in Illinois, the biotic community of which the species is a part, or the habitat essential to the species' existence in Illinois:

Construction and operation of the City of Sterling, Illinois' wastewater treatment plant outfall and multipoint diffuser project in Whiteside County, Illinois will not reduce the likelihood of the survival of state-listed threatened or endangered mussels in Illinois. For the purposes of biological comparison, it should be noted that the freshwater mussel fauna of the Fox River and

its tributaries in Illinois and Wisconsin were surveyed by Department staff during the summers of 1997-2001. A total of 3,585 live individuals comprised of 23 species were collected from 96 sampling stations. Of this total, 60 spike mussels (*Elliptio dilatata*) and four (4) black sandshell mussels (*Ligumia recta*) were collected.

The black sandshell mussel (*Ligumia recta*) is listed as threatened in Illinois because its range and abundance have declined in recent decades. This species was once fairly widespread in the state where it was found in most of the major river systems, but is now known from less than 25% of the counties with historic records. Although it is possible that live individuals of the black sandshell are present in the project area, it is unlikely due to the fact that only one (1) dead, weathered shell of spike and black sandshell mussels were found in the project area. Any live animals that are overlooked during the relocation effort could be at risk of injury or death as a result of construction activities. The relocation of all mussels encountered will make it unlikely that a significant number of individuals will be exposed to threats related to the wastewater treatment plant outfall and multipoint diffuser project in Sterling, Illinois.

As stated in the April 1996 Technical Report (working draft) titled - "Measures to minimize harm to *Lampsilis higginsii* [federally endangered Higgins Eye mussel] caused by passage of commercial navigation vessels in the upper Mississippi River" [prepared by the U.S. Army Corps of Engineers-Waterways Experiment Station]: Relocation is one of several methods that can be used to protect freshwater mussels. Relocation can be used to recolonize areas where previous populations were extirpated, to remove mussels from proposed construction sites, to boost numbers of endangered species, or to protect against high densities of the zebra mussel (*Dreissena polymorpha*). The survival of relocated mussels is closely linked to habitat quality.

Relocation sites should have the same conditions of substratum type and stability, and water velocity as the original habitat. Research from the federally endangered Higgins Eye mussel (*Lampsilis higginsii*) recovery team, under the guidance of the United States Fish and Wildlife Service, has determined that minimal mortality (<12%) and high recovery rate (>88%) were shown when aerial exposure of mussels was less than four (4) hours and when relocations were conducted in spring or autumn when air (12-18 C) and water temperature (15-23 C) were moderate.

As stated in the official conservation plan, WHA/HHES will implement sediment control and construction management measures to minimize the extent and duration of project related disturbance to the Rock River and any potential for direct/indirect impacts on mussels and/or mussel habitat. These measures may include the use of coffer dams, silt fencing, or other sediment control measures to limit downstream sedimentation during construction. The Illinois EPA has issued a 401 water quality certification for this project with conditions requiring strict sedimentation control measures be followed (as listed in Appendix C of the official Conservation Plan). The in-stream construction will take approximately 30 days and any potential short-term effects will most likely be limited to this time period. All mussels will be relocated from the outfall mixing zone limiting long-term operational effects.

5. Any measures required under Section 5.5 of the Illinois Endangered Species Protection Act [520 ILCS 10/5.5 - 17 IL. Adm. Code Part 1080.40(b)], will be performed:

Additional measures are listed below under "Authorization." This authorization is, by definition, subject to those terms and conditions and official WHA/City of Sterling, IL. signature(s) on this authorization indicates their commitment to performing those measures.

6. The public has received notice of the application and has had the opportunity to comment before the Department made any decision regarding the application:

Willett, Hofmann & Associates, Inc. (WHA), acting as environmental consultant for the City of Sterling, Illinois prepared a conservation plan as described by the Illinois Endangered Species Protection Act (520 ILCS 10/5.5). That plan and WHA's request for authorization for incidental take of black sandshell and spike mussels were received by the Illinois Department of Natural Resources (Department) on July 1, 2003. Public notice of WHA's request for authorization of incidental take of black sandshell and spike mussels was published in the Edwardsville Intelligencer (Official State newspaper) and the Daily Gazette (Whiteside County) on February 27, 2004, as well as on March 5, and March 13, 2004. Public comments on WHA's conservation plan were accepted by the Department until April 13, 2004. No comments were received by the public during the period of February 27 through April 13, 2004.

Authorization

It is the determination of the Department that the measures to be implemented by Willett, Hofmann & Associates, Inc. (WHA) and HHES, acting as environmental consultants for the City of Sterling, Illinois would adequately minimize and mitigate for the anticipated taking (relocation) of a small number of spike and black sandshell mussels due to the construction of a new wastewater outfall and multiport diffuser impacting the Rock River in Whiteside County, Illinois. Further, it is our opinion that the take (relocation) authorized herein would not diminish the likelihood of the survival of the spike and black sandshell mussels in the wild within the State of Illinois, the biotic community of which the species is a part or the habitat essential to the species' existence in Illinois.

Pursuant to Section 5.5 of the Illinois Endangered Species Protection Act [520 ILCS 10/5.5 - 17 IL. Adm. Code Part 1080.40(b)], this authorization is issued subject to the following additional terms and conditions:

1. This authorization is effective upon signature by the Department and shall remain in effect for a period of five (5) years after completion of the construction of a new wastewater outfall and multiport diffuser impacting the Rock River in Whiteside County, Illinois, unless terminated as pursuant to Section 5.5 of the Illinois Endangered Species Protection Act [520 ILCS 10/5.5 - 17 IL. Adm. Code Part 1080.80].

2. Freshwater mussel surveys shall be conducted prior to construction activities (related to a new wastewater outfall and multipoint diffuser impacting the Rock River) in the area(s) of direct impact, as well as the immediate downstream reaches (100 feet downstream). All mussels observed (listed or non-listed species) are to be relocated in order to minimize impacts. Mussel surveys will be conducted using standard survey techniques including searching by feel to methodically cover the area to be disturbed by the project (viewing boxes, wading in shallow water, SCUBA in deeper water-if applicable). All mussels found will be identified to species. Mussels shall be relocated into areas of suitable habitat, in the same stream, preferably upstream of the construction site. Specifically, the transplant site will be close to the collection area and have similar to better water quality and substrate. WHA/HHES shall provide the Department with a report detailing the results of all mussel surveys and relocation efforts within 45 days of completing all surveys/relocations.

3. **If, and only if**, live spike (*Elliptio dilatata*) and/or live black sandshell (*Ligumia recta*) mussels and/or any other live Federal or State endangered or threatened mussels are removed and relocated within the construction zone (approximately 25 feet by 250 feet) at Alternative Site #2, WHA/HHES/City of Sterling, IL., either solely and/or through a qualified environmental consultant(s), shall perform (or cause to be performed) surveys of the entire construction zone at Alternative Site #2. The purpose of these surveys is to determine if these listed species have recolonized areas directly impacted by the pipeline crossing. These surveys shall be conducted at the following intervals:

Two (2) years after completion of the new wastewater outfall and multipoint diffuser at Alternative Site #2, and at five (5) years after completion of the of the new wastewater outfall and multipoint diffuser at Alternative Site #2, WHA/HHES/City of Sterling, IL., either solely or through its environmental consultant, shall provide a copy of these survey reports to the Department within 45 days of survey completion. For example, if the diffuser project is completed in 2005, these surveys shall be conducted in 2007 and 2010. Freshwater mussels located within the construction zone (approximately 25 feet by 250 feet) at Alternative Site #2, shall be identified to species and enumerated and the length of each mussel shall be measured to the nearest millimeter. Handling of mussels shall be in compliance with any and all conditions and/or protocols included in the state and/or federal authorizations for this work. A report on the species, numbers and sizes of mussels found shall be provided to the Department within 45 days of the completion of each survey. Each report shall also include a qualitative evaluation of the habitat for freshwater mussels being provided within the construction zone (approximately 25 feet by 250 feet) at Alternative Site #2 and the manner in which that habitat has changed since the previous survey.

4. All mussels encountered within the State of Illinois during this project shall be subject to the general U.S. Fish and Wildlife Service handling protocol for determining presence/absence of species as found in "Section H" of the attached Federal Fish and Wildlife document.

5. The effective period of this authorization may be altered by mutual agreement between WHA/HHES/City of Sterling, Illinois and the Department.

6. This authorization may be revoked pursuant to Section 5.5 of the Illinois Endangered Species Protection Act [520 ILCS 10/5.5 - 17 IL. Adm. Code Part 1080.80] if the Department finds that the City of Sterling, IL./WHA/HHES has failed to comply with any of these terms and conditions or has been responsible for the relocation of spike and black sandshell mussels beyond that which is incidental to the construction of a new wastewater outfall and multipoint diffuser for the City of Sterling, impacting a portion of the Rock River in Whiteside County, Illinois.

7. The WHA/City of Sterling, IL. Official identified below is authorized to execute this agreement. Execution by WHA/City of Sterling's Official(s) indicates acceptance of all terms and conditions described in this agreement.

For the IL. Department of Natural Resources




Mike Conlin, Acting Director
Office of Resource Conservation

11.24.04

Date Signed

For WHA/City of Sterling, IL.



Signature

Jay Wieland, City Manager

Please print name and official title

11-18-04

Date Signed



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September 2, 2005

Mr. Matt Wagner
Willett, Hofmann & Associates, Inc.
809 East Second Street
P.O. Box 367
Dixon, Illinois 61021

Dear Mr. Wagner:

Ecological Specialists, Inc. has completed the unionid (freshwater mussel) relocation at the proposed wastewater outfall construction site on the Rock River in Sterling Illinois. A total of 758 live unionids of 20 species (Table 1) were collected and relocated to an upstream site (Figure 1; Site 3 from the 2001 survey). Two species collected, *Ligumia recta* (black sandshell) and *Cyclonaias tuberculata* (purple wartyback) are Illinois State Threatened species. All live individuals of these species were measured, aged, and photographed. Twenty whole substrate quarter meter samples were excavated in the collection area to determine presence of juveniles and to estimate density. Only one live unionid was collected in one of the samples. Therefore the estimated density in the area is 0.2 unionids/m². With a sample area of approximately 2900m², 580 live unionids were estimated to occur in the sample area. Ten whole substrate quarter meter samples were also conducted in the relocation area to ensure that the addition of the relocated unionids did not increase the area's density by more than 25%. Some live unionids were collected within 10m of the right descending bank but most were collected within 20m of the island. The area in the center of the river harbors few unionids. This may be due to the higher flows and more compact substrate observed throughout the center of the river.

If you have any questions or require further information, please feel free to contact me at 636-281-1982 or ebelt@ecologicalspecialists.com. It was a pleasure working with you again and we hope we can have the opportunity to do so again in the future.

Sincerely,

Eric Belt, Malacologist/Aquatic Ecologist

Table 1. Unionid species collected and relocated from the Rock River, near Sterling, IL.

Species	#Live	#FD	#WD
<i>Actinonaias ligamentina</i>	10	1	
<i>Amblema plicata</i>	3		
<i>Cyclonaias tuberculata</i> ¹	2		
<i>Elliptio dilatata</i> ¹			1
<i>Fusconaia flava</i>	6		
<i>Lampsilis cardium</i>	40	1	
<i>Lampsilis siliquoidea</i>	2		
<i>Lasmigona c. complanata</i>	11		
<i>Leptodea fragilis</i>	232	22	1
<i>Ligumia recta</i> ¹	16	2	1
<i>Obliquaria reflexa</i>	74	1	
<i>Obovaria olivaria</i>	3		
<i>Pleurobema sintoxia</i>			1
<i>Potamilus alatus</i>	87	8	
<i>Potamilus ohiensis</i>	27	7	
<i>Pyganodon grandis</i>	9		
<i>Quadrula metanevra</i>			1
<i>Quadrula p. pustulosa</i>	128	7	
<i>Quadrula quadrula</i>	61		
<i>Strophitus undulatus</i>	5		
<i>Tritogonia verrucosa</i>			1
<i>Truncilla donaciformis</i>	1	1	
<i>Truncilla truncata</i>	37	4	
<i>Utterbackia imbecillis</i>	4	1	
Totals	758	55	6
Total Number Live Species	20		
Total Number of Species	24		

¹Illinois State Threatened species